

REMARKS

Applicants have canceled claims 11-13 and 16. The cancellation of this or any other subject matter is without prejudice to applicants' right to pursue the subject matter of these claims in continuing or divisional applications that claim priority from this application under 35 U.S.C. § 120.

Applicants have amended claim 10 to recite that M is hafnium. Support for this amendment appears, e.g., in claim 16 as originally filed. Applicants have further amended claim 10 for clarity and to correct various inadvertant typographical errors.

Applicants have amended claim 14 to recite compound structures. Support for this amendment appears, e.g., in the specification as filed at page 19, line 1 to page 22, line 8.

None of these amendments adds new matter.

The Objections

1. The Examiner has objected to certain alleged informalities in claims 10-16. Applicants address each of these contentions below.

(i) Applicants have amended the definition of radical E in claim 10 to recite: "E is selected from the group

consisting of..." in order to comport with the Examiner's request.

(ii) Applicants have amended claim 10 to read "alkoxy" in order to comport with the Examiner's request.

(iii) Applicants have amended claim 10 to read "arloxy" in order to comport with the Examiner's request.

(iv) The Examiner states that there is no NHR^2 fragment in the structure accompanying claim 10. To expedite prosecution, applicants have amended the claim to recite " NR^2 fragment" for clarity. Applicants note, however, that one of skill in the art would recognize that the hydrogen atom attached to N in the structure has been omitted for clarity.

(v) Applicants have amended the definition of radicals R^1 and R^2 in claim 10 to clarify that R^1 and/or R^2 may be individually joined with X in a ring structure.

(vi) Applicants have amended the definition of index n' in claim 10 to recite "1 to 6" as requested by the Examiner.

(vii) Applicants have obviated the Examiner's objection by deleting references to those compounds wherein "y may be 1 or 2."

(viii) Applicants have amended the definition of index y in claim 10 to recite "y is 1, 2, or 3" as requested by the Examiner.

(ix) Applicants have amended claim 14 to recite the corresponding figures.

2. The Examiner has objected to claims 13 and 14 as lacking structures associated with Roman numeral designations. Applicants have obviated this objection by canceling claim 13, and by incorporating the relevant structures into claim 14.

3. The Examiner has objected to claim 15 because it is allegedly not clear what is meant by "pure with respect to the metal." The Examiner further contends that the term "substantially pure" is not understood. Applicants traverse.

Applicants disagree that the phrase "substantially pure with respect to the metal" is not clear. One of skill in the art would understand this phrase, as used herein, to denote a metal ligand complex that consists essentially of the identified metal, together with the specified ligand(s).

Preferably, the metal is about 90% or more pure, more
preferably, the metal is about 95% or more pure, even more
preferably, the metal is about 99% or more pure and most
preferably, the metal is about 99.5% or more pure with respect
to the metal (see, e.g., specification page 16, lines 9-13).
?

Applicants therefore request that the Examiner
withdraw these objections.

The Rejections

35 U.S.C. § 102

Claims 10-16 stand rejected under 35 U.S.C. § 102(a) as allegedly being anticipated by JP 11-199592 to Matsui et al. (hereafter "Matsui"). Claims 10-13, 15, and 16 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by WO 00/01460 to Murray (hereafter "Murray"). Because neither Matsui nor Murray discloses each and every limitation of the applicants' amended claims, neither reference renders the claims invalid under 35 U.S.C. § 102. Applicants address each of these references below.

Matsui

The Examiner has rejected claims 10-16 under 35 U.S.C. § 102(a) as allegedly being unpatentable over Matsui.

Specifically, the Examiner contends that the structures illustrated on page 19 of Matsui meet the structural features of the ligand sphere about the metal center. Regarding claim 15, the Examiner states that pure compounds are unpatentable over impure compounds if the utility is the same. Regarding claim 16, the Examiner states that Matsui indicates that M is a group 4 metal, which includes hafnium. The Examiner therefore contends that claims 10-16 are anticipated by Matsui. In light of the claim amendments, applicants traverse.

Applicants disagree that the instant claims are anticipated by Matsui. Matsui does not disclose the hafnium-containing metal ligand complexes of amended claims 10 and 14. In particular, none of the metal complexes referred to in Mitsui specifically contain hafnium. In contrast, applicants' amended claims 10 and 14 require that the metal M be hafnium.

While Matsui recites that group 3-11 transition metals are purportedly useful as polymerization catalysts, this does not constitute the "sufficient specificity" required to anticipate a specific example within a range. See MPEP 2131.03. Importantly, nowhere does Matsui exemplify hafnium-containing complexes. The disclosure of Matsui is limited to the specific complexes containing Ti, Zr, V, and Co on pages

40-42. Further, applicants have discovered, for the first time, that hafnium catalyst compositions and complexes can catalyze polymerization reactions surprisingly more efficiently and selectively than known systems containing zirconium (see specification page 39, lines 4-20). See MPEP 2131.03 ("If the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range ... it may be reasonable to conclude that the narrow range is not disclosed with 'sufficient specificity' to constitute an anticipation of the claims.") Accordingly, Matsui does not anticipate amended claims 10, 14, and 15 of the present invention.

Murray

The Examiner has rejected claims 10-13, 15, and 16 under 35 U.S.C. § 102(b) as allegedly being unpatentable over Murray. Specifically, the Examiner states that Murray teaches complexes described generically in claims 10-14. In light of the claim amendments, applicants traverse.

Applicants disagree that the instant claims are anticipated by Murray. Murray does not disclose the hafnium-containing metal ligand complexes of amended claim 10. In particular, none of the metal complexes referred to in Murray

specifically contain hafnium. In contrast, as discussed above, applicants' amended claims require that the metal M be hafnium.

While Murray recites that group 3 to 13 and lanthanide elements are purportedly useful as polymerization catalysts, this does not constitute the "sufficient specificity" required to anticipate a specific example within a range. See MPEP 2131.03. Importantly, Murray does not disclose nor exemplify hafnium-containing complexes. The disclosure of Murray is limited to particular complexes containing Zr. Further, as discussed above, applicants' hafnium catalyst compositions and complexes catalyze polymerization reactions surprisingly more efficiently and selectively than known zirconium systems (see specification page 39, lines 4-20). See MPEP 2131.03 ("If the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range ... it may be reasonable to conclude that the narrow range is not disclosed with 'sufficient specificity' to constitute an anticipation of the claims.") Accordingly, Murray does not anticipate the instant claims.

Applicants therefore request that the Examiner withdraw the outstanding Section 102 rejections.

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Conclusion

In view of the foregoing amendments and remarks, applicants respectfully request reconsideration and early allowance of the pending claims in this application. If the Examiner believes that a telephonic interview would be helpful, he is invited to call applicants' attorney or agents at any time.

Respectfully submitted,



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